to those which it has undertaken in former years to Labrador, Florida, &c.

WE learn from *Science* that the Leander McCormick Observatory of the University of Virginia was inaugurated on April 13, the ceremonies taking place in the public hall of the institution, and Prof. Asaph Hall, of the Naval Observatory, Washington, delivering the address. The principal instrument is the great Clark refractor of 26 inches' aperture. The Observatory has a house adjoining for the director, Prof. Stone, and is possessed of a considerable endowment fund, the gift of Mr. W. H. Vanderbilt, of New York.

CAPT. L. U. HERENDEEN, of San Francisco, communicates the following notes on prehistoric structures in Micronesia to *Science*:—A few years ago I visited Ponapé Island in the Pacific, in E. longitude 158° 22′, and N. latitude 6° 50′. The island is surrounded by a reef, with a broad ship-channel between it and the island. At places in the reef there were natural breaks, that served as entrances to the harbours. In these ship-channels there were a number of islands, many of which were surrounded by a wall of stone five or six feet high; and on these islands there stood a great many low houses, built of the same kind of stone as the walls about them. These structures seem to have been used as temples and forts. The singular feature of these islands is that the walls are a foot or more below the water. When they were built, they were evidently above the water, and connected with the mainland; but they have gradually sunk until the sea has risen a foot or more around them. The natives on the islands do not know when these works were built: it is so far back in the past, that they have even no tradition of the structures. Yet the works show signs of great skill, and certainly prove that whoever built them knew thoroughly how to transport and lift heavy blocks of stone. Up in the mountains of the island there is a quarry of the same kind of stone that was used in building the wall about the islands; and in that quarry to-day there are great blocks of stone that have been hewn out, ready for transportation. The natives have no tradition touching the quarry—who hewed the stone, when it was done, or why the work ceased. They are in greater ignorance of the great phenomena that are going on about them than the white man who touches on their island for a few hours for water. There is no doubt in my mind that the island was once inhabited by an intelligent race of people, who built the temples and forts of heavy masonry on the high bluffs of the shore of the island, and that, as the land gradually subsided, these bluffs became islands.

A CORRESPONDENT recently referred to the use of artificial teeth by the ancient Romans, as shown by a passage from Cicero, where one of the laws of the Twelve Tables is quoted. The law in question belongs to the Tenth Table (*de jure sacro*), which deals mainly with funerals, with the object of limiting the display and ceremonies attending them. Thus the body must not be burnt in more than three robes, or be attended to the grave by more than ten musicians; women must not tear their faces in time of mourning, nor must the bones be collected to make a new funeral with them, the bodies of slaves could not be embalmed, and the like. Section IX. of Table X., which is the one relating to teeth, reads as follows in Ortolan's text ("Histoire de la Législation Romaine," p. 121): "*Neve aurum addito. Quoi auro dentes vincti escunt, ast im cum illo sepelire urereve se fraude esto*—Add no gold; but if the teeth are bound with gold, then that gold may be buried or burnt with the corpse." The date of the Twelve Tables is put about 450 B.C., and it is thought possible by some writers that some of the provisions relating to funerals were taken from the laws of Solon. It would therefore appear that dentistry was known and practised to some extent in the earliest period of their history by the Romans—to an extent, at any rate, that they used gold for binding the teeth. How the artificial teeth were made, or whether they had artificial teeth at all, is not apparent. In the case of the Etruscan skull mentioned recently in NATURE, the artificial teeth are made from the teeth of animals.

M. SOROLOFF, who continues his regular analyses of the water of the Neva, has come to the conclusion that the differences between the average monthly content of solid mixture in the water and the yearly average may be expressed by a curve whose characteristics are the opposite to those of the curve for the average monthly temperatures. The solid inorganic deposit remaining after the evaporation of a given amount of water is also inversely proportionate to the amount of organic matter contained by the water of the Neva. When comparing these curves for the Neva with that showing the amount of solid matter contained by the Thames (as given in the *Journal* of the London Chemical Society for 1880), it appears that both rivers give the same curves, notwithstanding the wide difference of their origins, which coincidence may lead to the supposition that the above might be considered as a law for the rivers.

THE additions to the Zoological Society's Gardens during the past week include a Yellow Baboon (*Cynocephalus babouin* ♀) from West Africa, presented by Mrs. Wilson; a Lesser White-nosed Monkey (*Cercopithecus petaurista* ♀) from West Africa, presented by Mr. James S. Jameson; a Crested Pigeon (*Ocyphaps lophotes*) from Australia, presented by Mr. J. Harrison; a Glaucous Gull (*Larus glaucus*), European, presented by Mr. G. Edison; a Common Viper (*Vipera berus*), British, presented by Mr. W. H. B. Pain; four Common Lizards (*Lacerta vivipara*), British, presented by Mr. H. Hanauer; a Common Squirrel (*Sciurus vulgaris*), British, three Wigeons (*Mareca penelope* ♀ ♀ ♀), three Pintails (*Dafila acuta* ♀ ♀ ♀), two Shovellers (*Spatula clypeata* ♀ ♀), five Common Teal (*Querquedula crecca* ♂ ♂ ♂ ♀ ♀), European, purchased; a Yak (*Pœphagus grunniens*), born in the Gardens.

OUR ASTRONOMICAL COLUMN

TUTTLE'S COMET.—This comet returns to perihelion in the present year under circumstances which are not favourable for its re-observation, without an ephemeris deserving of some degree of reliance. For the last return in 1871 the perturbations during the previous revolution were very accurately determined by Tischler, of Königsberg, who lost his life before Metz in the Franco-German war; and the comet was detected at Marseilles about seven weeks before the perihelion passage, and was followed at the Cape of Good Hope for a still longer period after it. So far it does not appear that the observations of 1871-72 have been brought to bear upon the predicted elements, nor has it been notified that any one is occupied in ascertaining the effect of planetary attraction since the comet was last observed. Tischler's mean motion for 1871, neglecting perturbation, would bring the comet to perihelion again about 1885, September 23·5 G.M.T., and under this condition the comet's position will by readily commanded during the absence of moonlight in August, but unfortunately the theoretical intensity of light will be below the least value with which it has been thus far observed. Assuming the perihelion passage to fall on September 23, the following would be the rough places of the comet:—

At Greenwich Midnight

	R.A.	Decl.	Distance from Earth	Distance from Sun	Intensity of Light
	°	°			
August 10	106·5	+33·8	1·89	1·22	0·19
14	110·1	31·6	1·85	1·19	
18	113·6	29·3	1·82	1·17	0·22
22	117·0	26·7	1·78	1·14	
26	120·4	+24·0	1·75	1·12	0·26

In 1871, when the comet was detected by Borrelly at Marseilles with the aid of Tischler's ephemeris, the intensity of light was 0·54, and at the last Cape observation, 0·33. On August 10 the effect of an acceleration of eight days in the time of perihelion passage would be to increase the comet's right ascension rather more than 3°, and to diminish the declination about 4°·4.

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In the middle of September it will have attained the value at which observations have been already made.

This comet was first observed by Méchain on January 9, 1790. It was rediscovered by Mr. Tuttle at Cambridge, U.S., on September 5, 1858: from the observations made in this year its period was ascertained to be about 13·8 years, so that the comet had completed five revolutions since it was found by Méchain, without having been perceived. According to Clausen's calculations it was in perihelion on the following dates:—1803, November 7; 1817, May 18; 1830, December 6; and 1844, June 28. It approaches nearest to the orbit of Jupiter in heliocentric longitude 264°, or at a true anomaly of about 144°, when its distance from the planet's orbit is 0·8. At the comet's last passage through this point in July, 1873, the distance from Jupiter was as great as 8·9.

Subjoined are the elements of the orbit for 1871, expressed as usual in the catalogues, and with a slight correction to the predicted time of perihelion passage, which the observations showed to be required:—

Perihelion passage, 1871, December 1·7974 G.M.T.

Longitude of perihelion	116° 4′ 36″	Mean Equinox, 1870
,, ascending node ...	269 17 12	
Inclination	54 17 0	
Eccentricity	0·8210540	
Log. perihelion distance	0·0128823	
,, semi-axis major	0·7601603	

The corresponding period of revolution is 5044·7 days, or 13·812 years.

ASTRONOMICAL PHENOMENA FOR THE WEEK, 1885, MAY 10-16

(For the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on May 10

Sun rises, 4h. 18m.; souths, 11h. 56m. 12·1s.; sets, 19h. 35m.; decl. on meridian, 17° 44′ N.: Sidereal Time at Sunset, 10h. 50m.

Moon (New on May 14) rises, 2h. 28m.; souths, 8h. 24m.; sets, 14h. 31m.; decl. on meridian, 1° 30′ S.

Planet	Rises h. m.	Souths h. m.	Sets h. m.	Decl. on meridian ° ′
Mercury ...	3 55 ...	10 51 ...	17 47 ...	10 7 N.
Venus ...	4 25 ...	12 3 ...	19 41 ...	17 38 N.
Mars ...	3 42 ...	10 44 ...	17 46 ...	11 23 N.
Jupiter ...	11 25 ...	18 41 ...	1 57* ...	13 49 N.
Saturn ...	6 7 ...	14 15 ...	22 23 ...	22 15 N.

* Indicates that the setting is that of the following day.

Occultations of Stars by the Moon

May	Star	Mag.	Disap. h. m.	Reap. h. m.	Corresponding angles from vertex to right for inverted image ° °
11 ...	44 Piscium	... 6 ...	3 27	near approach ...	160 —
16 ...	130 Tauri	... 6 ...	18 31 ..	19 27 ...	137 298

Phenomena of Jupiter's Satellites

May	h. m.		May	h. m.	
10 ...	20 46	II. occ. disap.	14 ...	19 46	I. tr. ing.
13 ...	1 17	I. tr. ing.		22 6	I. tr. egr.
	21 58	IV. occ. disap.	15 ...	20 27	I. ecl. reap.
	22 25	I. occ. disap.			
	22 35	III. ecl. reap.			

The Occultations of Stars and Phenomena of Jupiter's Satellites are such as are visible at Greenwich.

May	h.	
10 ...	10 ..	Mercury stationary.
11 ...	9 ..	Mercury at greatest distance from the Sun.
13 ...	4 ...	Mercury in conjunction with and 0° 21′ south of the Moon.
13 ...	4 ..	Mars in conjunction with and 2° 4′ north of the Moon.
13 ...	9 ...	Mercury in conjunction with and 2° 27′ south of Mars.
14 ...	18 ...	Venus in conjunction with and 3° 47′ north of the Moon.
16 ...	15 ...	Saturn in conjunction with and 4° 2′ north of the Moon.

GEOGRAPHICAL NOTES

We regret to learn that the well-known African explorer, Dr. Gustav Nachtigal, died on April 24, on board the German gunboat *Möwe*, off the west coast of Africa. Dr. Nachtigal was born at Eichstadt in 1834, and was trained to the medical profession. In 1862 he went to Algiers on account of his health, and in 1868 he started on his memorable journey into the heart of Africa, visiting the territories of Bornu, Baghirmi, Wadai, Darfur, Kordofan, emerging at Khartoum in 1874. This work placed Dr. Nachtigal in the front rank of African explorers. At the time of his death, it is well known, he was looking after the interests of Germany in connection with its recent annexations in West Africa.

The death is announced from Königsberg of Dr. Karl Zöppritz, Professor of Geography in the University there, and well known as the author of the reports on the progress of geophysics and of African exploration in Behm-Wagner's Geographical Year-Book.

On Monday last a lecture was delivered at the Alexandra Palace by Prof. A. H. Keane, on "The Lapps: their Origin, Type, Affinities, Social Usages," in connection with the company of Lapps who have recently arrived in London and pitched their tents on the slopes of Muswell Hill for the summer months. The group consists of seven persons, mostly members of one family, from the Karasjok district in Finmark, Norway, and belongs to the "mountain" or nomad division of the race. As these "Mountain Finns," as the Norwegians call them, are of much purer descent than the "River" and "Sea" Lapps, who have given up their nomad life and now reside in settled communities either along the riverain tracts or on the sea coast, they afford ethnologists a favourable opportunity of studying the type of these primitive inhabitants of the Arctic regions of North-West Europe. They are accompanied by six reindeer, and two native dogs used for tending the herds, and have also brought with them specimens of the three kinds of sledges still in use, and some of the famous snow-shoes with which they travel with such surprising velocity over the frozen surface of the ground. The average height appears to be about five feet (extremes, 4·10 to 5·4 in.); but in some other respects the type seems to have deviated considerably from the Mongolic, to which it fundamentally belongs, and has been assimilated, especially in the colour of the hair and eyes, in the complexion and shape of the nose, to the surrounding Norse populations. But the lecturer seemed disposed to attribute this assimilation rather to like climatic influences than to actual intermixture, of which there is no direct evidence.

At the last meeting of the Geographical Society of Paris, M. Thouar described in detail the observations made by him during his recent journey in search of the remains of the unfortunate Crévaux expedition in the Northern Chaco. These were divided into notes on the flora and fauna, with specimens of the dialects of the Tobas, Matacos, and Chiriguanos, a description of the dress, ornaments, implements, utensils, &c., of the Tobas and Chiriguanos, anthropological details of the same tribes, an itinerary from Tarija to Asuncion, with numerous meteorological observations, and two documents belonging to the Crévaux mission. He added a study on the Peruvian and Bolivian affluents of the Amazon. With reference to the statement (recently quoted in Nature) that certain members of the mission were still alive amongst the Indians, M. Thouar stated that this information should be received with the greatest reserve, because the date to which it referred was prior to his own sojourn on the frontier, which he traversed from north to south when no one gave him any such information. Since his return to France he has received directly from Bolivia numerous communications from Dr. Gianneccini, who lives on the frontier; in these nothing is said on the subject. A monument to Dr. Crévaux is to be unveiled at Nancy on June 13.

The Geographical Society of Paris has awarded a gold medal (La Rouquette's prize) to the well-known Danish Government publication on Greenland, "Meddelelser om Grönland," in which are from time to time published the results of the Danish scientific expedition exploring that continent. The same honour has befallen Danish subjects twice before, viz. Lieut. Graak, for his explorations of the east coast of Greenland; and Messrs. Bredsdorff and Olsen, for their map, "Esquisse d'une Carte orographique de l'Europe."

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